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EXAMINER

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Please find below and/or attached an Office communication concerning this application or proceeding.

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/582,434
Filing Date: June 09, 2006
Appellant(s): YADONG, LI

Richard LaCava
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 9/16/10 appealing from the Office action mailed 6/4/10.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 1-2 are rejected.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the

subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

6,490,836

Moriau et al.

12-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriau et al. (US 6,490,836).

With regards to claim 1: Moriau et al. discloses a pair of flat clasping floorboard pieces (1) (figs. 22-23 and 25), each floorboard piece having an elongated strip shape; a slot mortise (10) being formed along one of the long sides of each floorboard piece, a tenon (9) provided along the other long side (figs. 22-23 and 25), an upper side wall of the slot mortise (10) having a short end (42) and a lower side wall of the slot mortise

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having a long end (43); an upper surface of the slot mortise (10) being parallel to and having the same height with an upper surface of the tenon (9); characterized in that a V-shaped groove is provided in a lower surface of the slot mortise (10) and a corresponding convexity (33) is provided on a lower surface of the tenon (9); the convexity (33), in an insertion direction of the tenon (10), has an anti-self-locking oblique surface (76) formed on a front end thereof; the anti-self-locking oblique surface (76) forms a first angle with an upper surface of the floorboard strip; a corresponding oblique surface (83) is formed on an external surface on the long end of the lower side wall of the slot mortise (10) to engage with the anti-self-locking oblique surface (76) of another floorboard of the pair of floorboard pieces; a rear end of the convexity (33) matches with an external side surface of the V-shaped groove of the another floorboard to form a self-locking surface, which forms a second angle (A) with the upper surface of the strip; the second angle ranges from 30-70°; and the external shape of the tenon (9) corresponds with the shape of the slot mortise (10) (fig. 23 and 25),

Moriau et al. discloses the oblique surface (76) forms a first angle with the upper surface of the floorboard piece (1), but fails to disclose the first angle ranging from 15-35°.

Moriau et al. appears to disclose a first angle between 15-35°. Note the first angle is smaller to that of the second angle (A) which is disclosed to be in the range of 30-70°. However, Moriau et al. does disclose the oblique surface (83) and corresponding oblique surface (83) are angled to provide a smooth shifting of locking elements over one another (fig. 25) (col. 11, lines 39-48 and col. 12, lines 24-28).

Given the disclosure of Moriau et al., it would have been obvious matter of design choice to one of ordinary skill in the art at the time of the invention was made to change the size/dimensions of the first angle to have desired value, such as the claimed first angle between 15-35°, in order to provide a desired degree of lockability and a smooth shifting of locking elements over one another for ease of installation. No new or unpredictable results would be expected from having a first angle 15°-35°, it appears the invention would perform equally well with a first angle value (i.e. 36°) outside of the claimed range.

Moriau et al. further discloses the upper surface of the slot mortise (1) overlaps the upper surface of the tenon (9) of the another floorboard before the self-locking surface is formed as the pair of floorboard pieces are attached horizontally relative to each other (fig. 25).

Moriau et al. does not explicitly disclose the upper surface of the slot mortise overlaps the upper surface of the tenon of another floor prior to deflection of the lower surface of the slot mortise. Moriau et al. further fails to disclose the distance is no less than 1-2 mm.

However, Moriau et al. does disclose the front extremity of the tenon (9) is shaped to extend into slot mortise so as to prevent the front extremity from pressing against the front side of the short end (M) of the slot mortise (col. 12, lines 5-15).

Examiner submits there will inherently be an overlap of the tenon and mortise prior to any deflection as the force exerted on floorboard piece by the user is that of a horizontal force (fig. 25). From a physics perspective, in order for the lower portion of

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the slot mortise to deflect, a portion of the tongue must be inserted in the slot mortise prior to deflection as it is the leverage of the tongue and the upper surface of the slot mortise that causes the deflection of the lower surface of the slot mortise. Note Moriau et al. discloses the floorboard piece is installed laterally (fig. 25); therefore no vertical forces would be applied by the user during installation.

It would have obvious matter of design choice to one of ordinary skill in the art at the time of invention to change the size/proportion of the overlap distance of the upper surface of the slot mortise and the tenon of the another floorboard to extend without deflection of the lower surface of the slot mortise of the floorboard piece and before the self-locking surface is formed between the floorboard pieces in order to provide a flooring structure with a tenon end or front extremity that properly guides the tenon into the slot mortise without pressing against the short end of the slot mortise. No new or unpredictable results would be expected from having an overlap distance of 1-2 mm, it appears the invention would perform equally well with an overlap (i.e. 3mm) outside of the claimed range. *In Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

With regards to claim 2: Moriau et al. discloses everything previously mentioned, including the long end side wall of the slot mortise (10) being longer than the short end

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sidewall, but fails to disclose the long end side wall is 2-4mm longer than the short end wall.

However, it would have been an obvious matter of design choice to one of ordinary skill in the art at the time of the invention to adjust the proportions of the floorboard piece in order to provide a floorboard structure that is stable and safe when joined to similar floorboard structures, no new or unpredictable results would be expected from having a long edge side wall 2-4mm longer than the short end wall. Examiner notes the floorboards of Moriau et al. includes a similar structure and is installed in the same manner as applicants. *In Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

(10) Response to Argument

On pages 6 and 10-12 of the Appeal Brief and with respect to claim 1, Appellant argues that the overlap range of 1-2 mm is critical to preventing floorboard breakage during horizontal assembly. Appellant submits Moriau et al. does not disclose or even suggest an overlap range. Appellant further submits that the claimed floorboard panels would not be subjected to plastic deformation and that smooth locking of the floorboard elements would occur only if a 1-2 mm overlap prior to deflection is provided.

Examiner submits from a physics perspective, the only force being applied by the user/installer is that of a horizontal force (see fig. 25; col. 12, lines 13-23). In order for the tenon to be inserted in the slot mortise in a horizontal manner as desired by Moriau et al., a portion of the tenon must be inserted in the slot mortise prior to deflection as it is the leverage (i.e. applied vertical force) of the upper surface (86) of the slot mortise on the tenon (9) which causes the deflection of the lower surface of the slot mortise (see fig. 25). Examiner submits horizontal installation without damage to the tenon cannot occur if the above conditions are not met, which Appellant acknowledges in the last three lines of page 7 of the Appeal Brief. Moriau et al. is silent to the tenon providing an overlap of 1-2 mm prior to deflection, which Examiner notes does not necessarily preclude an overlap greater than 1-2 mm. Examiner submits the only difference between the tenon and slot mortise of Moriau et al. and that of Appellants is a recitation of relative dimensions, to which Moriau et al. is silent. However, the elements of the Appellant's floorboards would not perform differently from the prior art floorboards disclosed by Moriau et al. At the time of invention, one of ordinary skill in the art would have known to design the tenon of Moriau et al. to provide proper overlap, such as 1-2 mm, in order to avoid damage to the tenon when the floorboards are installed in a horizontal manner as desired by Moriau et al. Note Moriau et al. discloses the tenon (9) is shaped to avoid contact with the short end (42, upper lip) of the slot mortise as the floorboards are pushed toward each in the same plane (fig. 25; col. 12, lines 13-23).

On pages 6-7 of the Appeal Brief and with respect to claim 1, Appellant submits that when the flexural stress is unchanged, the larger the length of the tenon, the smaller the pressure.

Examiner submits as shown in figure A (pg. 7 of the Appeal Brief), the pressure P described by Applicant is the load applied to the cantilevered structure of the tenon. While Examiner agrees with Applicant statement that there is inverse proportion between the pressure P required to bend the floorboard tenon and the tenon length L, Examiner notes the length of the tenon is not recited in the claims. No deflection would occur when the tenon is inserted 1-2 mm into the slot mortise as claimed, therefore no vertical loads/forces would be applied during that step in installation.

On pages 7-8 of the Appeal Brief and with respect to claim 1, Appellant argues that a floorboard with no overlap between the upper surfaces of the slot mortise and tenon prior to deflection of the lower surface of the slot mortise would result in damage to the front end of the tenon during installation. Further, on pages 9-10 of the Appeal Brief and with further respect to claim 1, Appellant argues that if an overlap of less than 1-2 mm between the upper surface of the slot mortise and tenon is provided, local plastic deformation would occur.

Examiner submits the scenarios described by Appellant are a possibility. However, damage to the tenon described by Appellant is also dependent on the dimensions and/or shape of the tenon and slot mortise. Further, damage as a result of plastic deformability would also be dependent on the material of the floorboards. Nonetheless, as previously noted, Moriau et al. discloses the tenon is shaped in such a

manner to avoid damage to the tenon when installed in a substantially horizontal manner (fig. 25; col. 12, lines 13-23). Examiner agrees with Appellant's statement found in the last three lines of page 7 of the Appeal Brief that correct installation cannot be achieved without overlap of the upper surfaces of the tenon and slot mortise prior to deflection of the slot mortise. As Moriau et al discloses the floorboards are installed in a horizontal manner (fig. 25), the slot mortise must be inserted into the slot mortise prior to deflection, otherwise, correct installation cannot be achieved as acknowledged by Appellant.

On pages 13-15 of Appeal Brief and with further respect to claim 1, Appellant argues that while Moriau et al. does disclose angle A between 30-70 degrees, no mention of the angle of surface 76, as shown Figs. 22-25, having the claimed angle between 15-35 degrees is taught. Appellant submits that the angle of surface 76 is not a result effective variable, therefore the conclusion of routine experimentation cannot be supported. Further, Appellant submits the comparison of angle A disclosed by Moriau et al. to ascertain the angle of surface 76 is improper because Moriau et al. does not disclose the drawings are to scale.

Appellant is correct in stating that Moriau et al. fails to disclose the drawings are to scale, Examiner was merely stating that angle of surface 76 appeared less inclined than angle A (30-70 degrees) formed by surface 75. Nonetheless, Moriau et al. does explicitly disclose surface 76 has a weaker (less inclined) inclination than surface 75 which forms angle A (col. 11, lines 45-51; figs. 22-23). Further, the ramp surface 83 to which surface 76 engages is also less inclined to allow smooth shifting of elements.

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(col. 12, lines 24-28; fig. 25). As Moriau et al. discloses the angle of surface 76 is less inclined than surface 75 having an angle of 30-70 degrees, at the time invention, one of ordinary skill would have designed the angle of surface 76 to have a inclination for ease engagement and/or coupling. To have chosen surface 76 of Moriau et al. to have an angle of 15-35 degrees would not be expected yield any new or unpredictable results.

On page 15 of the Appeal Brief and with respect to claim 2, Applicant argues that it would not have been an obvious matter design choice to modify Moriau et al. to have the long end of the slot mortise be 2-4 longer than the short end of the slot mortise.

Examiner submits that Moriau et al. does disclose the long end 43 of the slot mortise being longer than the short end 42 of the slot mortise. Examiner maintains that at the time invention, one of ordinary skill in the art would have known to design the dimensions of the panel including the short and long end of the slot mortise in order to provide proper connectability of the slot mortise to the tenon of a similar panel. The only difference between the claimed upper and lower walls of the slot mortise of Moriau et al. and that of Appellants is a recitation of relative dimensions, to which Moriau et al. is silent. However, the elements of the Appellant's floorboards would not perform differently than the prior art floorboards disclosed by Moriau et al. No new or unpredictable results would be obtained from having a long end of a slot mortise 2-4mm longer than the short end of the slot mortise.

(11) Related Proceeding(s) Appendix

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No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Jessie Fonseca/

Examiner, Art Unit 3633

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